

# CT 159 Modular test stand for single-cylinder engines, 3,0kW

The series CT 159 offers four different internal combustion engines in the power range up to 3,0 kW: A four-stroke diesel and petrol engine, a petrol engine with adjustable compression ratio and a two-stroke petrol engine. The engines are supplied with fuel and air via a modular test stand, CT 159. The exhaust fumes are discharged to the outside via hoses.

The engines are connected to the HM 365 Universal drive and brake unit by a V-belt. HM 365 is first used to start the engines.

While the engines are running, HM 365 is operated in generator mode, thus braking the engines. The engines can be examined under full load or under partial load conditions. The characteristic diagram is determined with variable load and speed. The interaction of the brake and engine can also be examined in this context.



HM 365 Universal drive and brake unit

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## HM 365 + CT 159 + test engine (CT 150 – CT 153) incl. software for data acquisition

- characteristics for full and partial load
- determination of friction loss in the engine
- comparison of diesel and petrol engines
- comparison of 2-stroke and 4-stroke engines
- 4-stroke petrol engine with variable compression

## Extended range of experiments

with electronic indication including software for data acquisition with CT 159.01 + engine-specific pressure transducer with TDC sensor (CT 159.03 – CT 159.05)

and/or exhaust gas analysis with CT 159.02

### CT 150 Four-stroke petrol engine

Air-cooled, single-cylinder, 4-stroke petrol engine with external carburation



### CT 151 Four-stroke diesel engine

Air-cooled, single-cylinder, 4-stroke diesel engine with direct injection



### CT 153 Two-stroke petrol engine

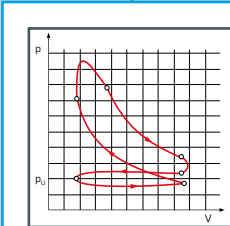
Air-cooled, single-cylinder, 2-stroke petrol engine with diaphragm carburettor



### CT 159.03 Pressure transducer and TDC sensor

### CT 159.04 Pressure transducer and TDC sensor

### CT 159.05 Pressure transducer and TDC sensor



### CT 159.01 Electronic engine indicating system for CT 159

Pressure measurement in the cylinder chamber of an internal combustion engine

- p-V diagram
- p-t diagram
- pressure curve during gas exchange
- determination of the indicated performance
- determination of mechanical efficiency



### CT 159.02 Exhaust gas analysing unit

Measurement of the composition of exhaust gases (CO, CO<sub>2</sub>, HC, O<sub>2</sub>), the fuel/air ratio  $\lambda$  and the oil temperature of the engine.